ADJUSTABLE DISPLAY MONITOR UNIT

CROSS-REFERENCE TO RELATED APPLICATION

This application claims priority from U.S. Provisional Patent Application Ser. No. 60/174,970, filed Jan. 6, 2000 for a MULTI-POSITION DISPLAY MONITOR.

TECHNICAL FIELD

The present invention relates generally to display monitors, and more particularly, to display monitors which can be selectively configured for viewing, regardless of the mounting orientation.

BACKGROUND OF THE INVENTION

Modern display monitors are found throughout the home and office. The monitors are found connected to computers, televisions, digital video display machines, videocassette recorders, security devices and sound devices. The variety of uses has increased the number of monitors found in both home and office settings. In the home setting, monitors are found in virtually every room of many houses, including living rooms, family rooms, dining rooms, bedrooms, bathrooms, kitchens and even garages. The varied environments require a versatile monitor that is adaptable to the setting and which accommodates different viewing orientations.

Historically, monitors, used for viewing entertainment content, have been large cathode ray tube devices and thus typically have been heavy and bulky. These monitors require a large amount of space and a flat surface on which to be placed. Many times they are the focal point of a room. Computer monitors, in contrast, may employ an adjustable screen where a user can reposition the screen to some degree to accommodate a viewer's position. However, many of these monitors are still large and bulky, and require sufficient table space on which to place the monitor. With the emergence of flat panel display monitors, less space is needed to accommodate monitors, and hence, there has been increased versatility in the use and placement of monitors.

To meet the needs of today's display monitor users, the display monitors need to be adaptable. However, the adjustability of known monitors generally is limited by the monitor's primary mounting orientation. For example, an overhead-mounting monitor typically is specially designed for ceiling or overhead mounting, such that it lacks the versatility to provide adequate viewing when mounted upright on a table or on a wall. More particularly, known display monitors lack the adjustability necessary for viewing the monitor from alternative viewer orientations, such as from a recumbent position.

To increase monitor adjustability, various swivels and pivots have been added to monitor units. These pivots and swivels often allow adjustability in two axes, namely an axis to accommodate tilting a table top mounted display screen upwards and downwards, and an axis to accommodate rotating the table top mounted display screen right and left. However, the pivot points are generally limited and hence do not adequately provide a multi-positional monitor for all possible viewer orientations.

Articulated arm extensions have been utilized to increase adjustability of display monitors. However, these extensions themselves are often large and bulky, and the joints of such extensions typically require springs to maintain the position of the arm in a particular conformation. Positioning of the arm may become difficult if the springs wear. Moreover, a single arm extension may lack lateral stability.

An alternative response to the need for providing a display monitor that can be viewed from variable positions involves provision of a monitor that changes image orientation. Such a display monitor would provide an option to change the image displayed from a portrait view to a landscape view. This change in image orientation is intended to accommodate viewing from a reclining position, such as when the viewer is resting with his/her head facing to one side or the other. However, these image orientation changes may distort the picture or frame the picture such that it does not fit the monitor viewing area.

The adaptability of display monitors also extends to the storing of the monitors when not in use. The less obtrusive the monitor is, the more consumer marketable the monitor may be. By having both a deployed and stowed position, monitors can be kept out of sight when not in use. Such stowable monitors are found on airplanes as well as in automobiles. However, the monitors are generally only pivotal between a stowed position and a single deployed position, with little or no adjustability once deployed. Moreover, these monitors usually require a specially designed recessed area in which to mount the monitor and are not adaptable to more varied uses.

SUMMARY OF THE INVENTION

The present disclosure provides for a multi-positional, adjustable, stowable display monitor unit that accommodates varied viewing orientations. In the depicted embodiment, the invention includes a display monitor unit mountable on a reference surface, the display monitor unit having a base, an arm and a screen. The base rotates relative to the reference surface about a first axis that extends through the reference surface, while the arm rotates about a second axis that is normal to the first axis. The arm may have a proximal region and a distal region, the arm being attached to the base and the distal region being attached to the screen. The screen rotates about a third axis which extends though the planar viewing surface of the screen such that the screen can be viewed selectively from an upright, inverted and recumbent position, regardless of the orientation of the reference surface.

The base may be circular, with a recessed perimeter portion, and the arm may be an arcuate arm with opposing ends and a crest such that the ends of the arcuate arm may be attached to the circular base for pivot between a stowed position and a deployed position. When in the stowed position, the arm may fold flush into the recessed perimeter portion of the circular base.

These and additional objects and advantages of the present invention will be more readily understood after consideration of the drawings and the detailed description of the preferred embodiment which follows.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is an isometric view of a display monitor unit constructed in accordance with the present invention.

FIG. **2** is an overhead view of the display monitor unit of FIG. **1** showing rotation of a base of the display monitor unit.

FIG. **3** is a side view of the display monitor unit of FIG. **1** mounted to a wall showing pivotal motion of an arm of the display monitor unit.

FIG. **4** is a front view of the display monitor unit of FIG. **1** mounted to a ceiling and showing rotation of a screen of the display monitor unit.